

IFSH Seminar Series

Thursday, April 2, 2015

1:00PM – 2:00 PM

Bldg. 91, Room 216, Moffett Campus

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“No Metal in the Microwave” and More Microwave Myths and Misconceptions

Biosketch

Greg Fleischman is a chemical engineer, holding both B.S. (Purdue) and Ph.D. (University of Arizona) degrees in the field. His career has spanned industry, academia, and, for the last 24 years, government in the position of Research Chemical Engineer at the U.S. Food and Drug Administration. Previously he worked for the Firestone Tire & Rubber Co. and General Foods Corporation (now Kraft Foods). In academia, he held a post-doctoral appointment at the University of Arizona Health Sciences Center and later returned as an assistant professor in the Department of Agricultural and Biosystems Engineering. Since 1991, he has been with the FDA at IFSH. His current research interests are in microwave heating applied to cooking, pasteurization and sterilization of food, general heat and mass transfer in food processing systems, and the kinetics of microbial destruction in foods.

Abstract

Microwave heating was accidentally discovered in the 1940s when the first research on microwave communications was conducted. Within a year, the first commercial microwave oven appeared, eventually followed by home units. In the ensuing decades, microwave ovens became smaller and cheaper, to the point where they are in 90% of American households and in the break room of almost every business. Its ubiquity, however, has not dispelled common misconceptions about microwave heating. This seminar will discuss microwave energy and its interaction with matter while contrasting its use in heating to that in conventional ovens. Myths and misconceptions will be examined in light of this discussion, and some unusual phenomena unique to this mode of heating will be demonstrated.